Title (en)

CARDIAC AND RESPIRATORY GATED MAGNETIC RESONANCE IMAGING

Publication

EP 0232309 B1 19900523 (EN)

Application

EP 86904331 A 19860730

Priority

US 76444085 A 19850809

Abstract (en)

[origin: WO8700922A1] A magnetic resonance imaging apparatus (A) generates a uniform main magnetic field, gradient fields transversely thereacross, excites resonance in nuclei within an image region, receives radio frequency signals from the resonating nuclei, and reconstructs images representative thereof. Electrodes (30) monitor the cardiac cycle of a patient (B) being imaged and an expansible belt (32) monitors the respiratory cycle. A carrier signal from a generator (52) is modulated with the respiratory signals. The modulated carrier signals are combined (60) with the cardiac signals and converted to a light signal by a light source (62). A fiber optic cable (36) conducts the light signals to a light receiver (70). Band pass filters (72, 100) separate the received cardiac and respiratory encoded carrier signals. A zero detector (80) provides a scan initiation signal in response to a preselected portion of the cardiac cycle. The respiratory encoded carrier signal is demodulated by demodulator (102) and a comparator (116) blocks or enables the processing of image data during a selected window of the respiratory cycle. A window adjustment means (118) adjusts the respiratory window as a function of phase encoding of the resonating nuclei.

IPC 1-7

A61B 6/00; G01N 24/08

IPC 8 full level

A61B 5/055 (2006.01); **A61B 10/00** (2006.01); **G01N 24/08** (2006.01); **G01N 33/00** (2006.01); **G01R 33/48** (2006.01); **G01R 33/567** (2006.01); A61B 6/00 (2006.01)

CPC (source: EP US)

A61B 5/7285 (2013.01 - EP US); **G01R 33/5673** (2013.01 - EP US); A61B 5/7239 (2013.01 - EP US); A61B 6/541 (2013.01 - EP US)

Designated contracting state (EPC)

DE GB NL

DOCDB simple family (publication)

WO 8700922 A1 19870212; DE 3671527 D1 19900628; EP 0232309 A1 19870819; EP 0232309 B1 19900523; JP H0714390 B2 19950222; JP S63501338 A 19880526; US 4694837 A 19870922

DOCDB simple family (application)

GB 8600451 W 19860730; DE 3671527 T 19860730; EP 86904331 A 19860730; JP 50414686 A 19860730; US 76444085 A 19850809